2 ~~--41.~~ The apparatus of claim ~~40~~ 1 wherein the impeller comprises at least 3 blades.--

3 ~~--42.~~ The apparatus of claim ~~41~~ 2 wherein the impeller has 4 blades.--

4 ~~--43.~~ The apparatus of claim ~~40~~ 1 wherein a plurality of magnets is disposed within each blade.--

5 ~~--44.~~ The apparatus of claim ~~40~~ 1 wherein a single magnet is disposed within each blade.--

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6 ~~--45.~~ The apparatus of claim ~~40~~ 1 wherein the blades are separated by channels extending from a first face to an opposing second face of the impeller.--

7 ~~--46.~~ The apparatus of claim ~~45~~ 6 wherein the second face of the impeller includes a plurality of tapered surfaces forming the hydrodynamic bearing surface.--

8 ~~--47.~~ The apparatus of claim ~~40~~ 1 wherein the apparatus further comprises:

a shaft coupled to a center of a face of the impeller, the shaft axially aligned with the impeller axis of rotation.--

9 --~~48~~. A blood pump apparatus comprising:

an impeller having a hydrodynamic bearing surface and a plurality of channels extending substantially radially from a center to a periphery of the impeller; and

a plurality of magnets, each magnet disposed within the impeller between a pair of channels, wherein an axis of magnetization of the magnets is substantially parallel to an impeller axis of rotation.--

10 --~~49~~. The apparatus of claim 9 ~~48~~ wherein the impeller comprises at least 3 channels.--

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11 --~~50~~. The apparatus of claim 10 ~~49~~ wherein the impeller comprises 4 channels.--

12 --~~51~~. The apparatus of claim 9 ~~48~~ wherein the channels extend from a first face to an opposing second face of the impeller.--

13 --~~52~~. The apparatus of claim 12 ~~51~~ wherein the second face of the impeller includes a plurality of tapered surfaces forming the hydrodynamic bearing surface.--

14 --~~53~~. The apparatus of claim 9 ~~48~~ wherein a plurality of magnets is disposed within each blade.--

15 --~~54~~ 9. The apparatus of claim ~~48~~ wherein a single magnet is disposed within each blade.--

16 --~~55~~. 9 The apparatus of claim ~~48~~ wherein the apparatus further comprises:

a shaft coupled to a center of a face of the impeller, the shaft axially aligned with the impeller axis of rotation.--

17 --~~56~~. A blood pump apparatus, comprising:

an impeller having a hydrodynamic bearing surface; and

a first stator and a second stator, wherein the impeller is disposed axially between the first and second stators, wherein the impeller and stators form an axial flux gap motor.--

18 --~~57~~. 17 The apparatus of claim ~~56~~ wherein the impeller further comprises a plurality of magnets, each magnet having a magnetic axis substantially parallel to an impeller axis of rotation.--

19 --~~58~~. 18 The apparatus of claim ~~57~~ wherein the magnets are disposed within blades of the impeller.--

18

20 ~~--59~~. The apparatus of claim ~~57~~ wherein the impeller comprises a plurality of channels extending from a center to a periphery of the impeller.--

20

23 ~~--60~~. The apparatus of claim ~~59~~ having at least 3 channels.--

20

24 ~~--61~~. The apparatus of claim ~~59~~ having 4 channels.--

19

21 ~~--62~~. The apparatus of claim ~~58~~ wherein a plurality of magnets is disposed within each blade.--

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22 ~~--63~~. The apparatus of claim ~~58~~ wherein a single magnet is disposed within each blade.--

25 ~~--64~~. A blood pump apparatus, comprising:

a housing defining a volute, and

an impeller, the impeller having a hydrodynamic bearing to provide axial support, the impeller having a magnetic bearing to provide radial support.--

25

26 ~~--65~~. The apparatus of claim ~~64~~ wherein the impeller further comprises a plurality of magnets, each magnet having a magnetic axis substantially parallel to an impeller axis of rotation.--

26

27 --~~66~~. The apparatus of claim ~~65~~ wherein the magnets are disposed within blades of the impeller.--

26

28 --~~67~~. The apparatus of claim ~~65~~ wherein the impeller comprises a plurality of channels extending from a center to a periphery of the impeller.--

28

31 --~~68~~. The apparatus of claim ~~67~~ having at least 3 channels.--

Cancelled

28

32 --~~69~~. The apparatus of claim ~~67~~ having 4 channels.--

27

29 --~~70~~ The apparatus of claim ~~66~~ wherein a plurality of magnets is disposed within each blade.--

27

30 --~~71~~. The apparatus of claim ~~66~~ wherein a single magnet is disposed within each blade.--

REMARKS

Claim 1 has been cancelled and claims 40-71 are presented. Applicant encloses a *Patent Application Fee Determination Record* (form PTO/SB/06) and a check for $147. The Commissioner is hereby authorized to credit any overpayment or charge any fee for additional claims to deposit account no. 07-1141.

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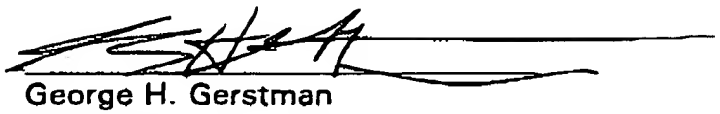
Examination on the merits of this application is respectfully requested.

Respectfully submitted,



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